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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,438	06/13/2000	Mats Leijon	705/72339-2	1157

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EXAMINER	
MULLINS, BURTON S	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/509,438	LEIJON ET AL.	
	Examiner	Art Unit	
	Burton S. Mullins	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 April 2002*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21 and 23-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-21 and 23-39* is/are rejected.

7)☒ Claim(s) *9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 March 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/00, 1/01 & 10/02*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Suspension of Action

1. This action is a response to the request for reconsideration filed April 15, 2002. Pursuant to the Board of Appeal's final decision regarding U.S. Application No. 08/973,019, suspension has been lifted. As set forth in the decision on petition requesting suspension, the instant application was granted a suspension pending the decision on appeal of the '019 application. On November 27, 2002, the Board affirmed the rejection of the '019 application and on August 27, 2003, the Board denied applicant's request for reconsideration, thus terminating prosecution of the '019 application. An action on the merits follows.

Claims

2. It is noted that Claim 5 is still pending in the application. Claim 5 was not cancelled because in the amendment filed March 28, 2000 the direction "cancel claim" (see middle of page 2) was not accompanied by a claim number. Appropriate correction is required.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "suppression filter" (claims 17-18) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 3-7, 10-21 and 23-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over over DeMello et al. (USP 4,368,418) in view of Elton et al. (USP 4,853,565).

DeMello discloses the claimed invention except for having an electrical winding comprised of semiconducting layers. DeMello discloses a high voltage rotating electrical machine comprising a stator having a core and a three phase winding, a rotor having a magnetic structure which may be either a symmetrical structure for asynchronous operation and a salient pole structure for synchronous operation. In the case of the symmetrical rotor construction, the stator and rotor constitute a rotating induction reactor which operates in the same manner as a free running, unloaded induction motor. The induction reactor exhibits characteristics similar to a saturable reactor with respect to var versus voltage absorption, but does not have the undesirable harmonics normally present in the saturable reactor. In the case of the salient pole rotor construction the stator and rotor constitute a rotating synchronous reactor which operates in the same manner as a free running unloaded reluctance motor. A series compensation arrangement is provided by connecting capacitance means in series with the stator winding to reduce the droop characteristic of the incremental saturated inductance of the reactor to almost zero. The transformer connecting the rotating reactor to the high voltage system could be provided with amps for steady state adjustment of the voltage level to be controlled.

Elton '565 teaches having an electrical cable provided with an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with a cable conductor. In an alternate embodiment, Elton discloses an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator having a predetermined reference potential. Furthermore, note that Elton teaches that it is known to provide a semiconducting layer in the insulation of a conductor and to connect that layer to a fixed potential in order to provide an equipotential surface on the conductor preventing corona discharge around the conductors.

lt would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the cable winding as taught by Elton '565 to the rotating electric machine of DeMello since such a modification according to Elton '565 would prohibit the development of corona discharge. Elton further teach in column 2, lines 42-48 that having a semiconducting layer would bleed off any static electric discharge or electric discharge developed on the exterior surface of the insulation.

6. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over DeMello in view of Elton '165 and further in view of Elton ('116). DeMello and Elton '565 disclose the claimed invention except for a teaching that the semiconducting layers and the insulation have the same coefficients of thermal expansion.

Elton '116 teaches that it is well known to form different overlapping insulations with the same coefficient of thermal expansion in order to prevent thermal stress to separate and crack the materials to cause failure of the insulation (see lines 38-44, col.7).

It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the semiconducting layers and insulation of DeMello and Elton '565 such that the different layers of insulation had similar or the same coefficient of thermal expansion, as disclosed by Elton '116, in order to prevent failure caused by thermal aging and cycling.

Response to Arguments

7. Applicant's arguments filed April 23, 2002 have been fully considered but they are not wholly persuasive. With regard to the rejection of claim 1 over DeMello and Elton '565, applicant argues that Elton does not teach or suggest that the cable in Fig.7 is used as a winding in a rotating electrical machine, that there is no evidence of desirability to modify DeMello's winding using Elton's high voltage winding, and that there would be no reasonable expectation of success in the combination.

With regard to applicant's first argument, the examiner points out that Elton clearly intends the insulated conductors for use as windings in a dynamoelectric machine (abstract; c.4, line 50-c.6, line 4; c.8, lines 45-60; Figs.1-6).

With regard to applicant's argument that there is no motivation to combine Elton with DeMello, In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837

F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Elton would prohibit the development of corona discharge.

In response to applicant's argument that there is no likelihood of success, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Elton's cable 100 of dual-layer semiconductors prevents corona discharge since the layer 110 bleeds off static electrical charge on the exterior of the insulation 106 (c.7, lines 28-33).

In response to applicant's arguments concerning the rejection of claims 2 and 8 over the combination of DeMello, Elton '565 and Elton '116, applicant argues only that the base combination of DeMello and Elton '565 is improper for the reasons given above. Since the arguments regarding DeMello and Elton '565 were not convincing, the rejection of claims 2 and 8 remains. Elton '116 is used to show that one of ordinary skill would have been found it desirable for first and second insulation layers to have the same coefficient of thermal expansion to withstand aging.

Allowable Subject Matter

8. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. DeMello and Elton '565 (or '116) do not teach, alone or in

combination, the feature of the current carrying conductor comprising "a plurality of conductive elements, and a selected number of said conductive elements being uninsulated from each other." Takaoka was used previously to reject claim 9; however, the examiner has concluded that this rejection is improper since Takaoka is directed to high voltage power lines and thus would not be applicable to Elton's and DeMello's rotating synchronous machine cables.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 571-272-2029. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be

reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
March 7, 2004